



City of Phoenix

OFFICE OF ENVIRONMENTAL PROGRAMS

December 3, 2012

Mr. Henry Darwin, Director
Arizona Department of Environmental Quality
1110 West Washington Street
Phoenix, Arizona 85007

Re: Roosevelt Irrigation District's Modified Early Response Action Work Plan for the West Van Buren Area Water Quality Assurance Revolving Fund (WQARF) Registry Site

Dear Director Darwin:

On behalf of the 14 public and private stakeholders ("Stakeholders") listed below, I am writing with regard to the "Modified Early Response Action Work Plan for the West Van Buren WQARF Registry Site, Phoenix, Arizona" ("Modified ERA Work Plan"). The Modified ERA Work Plan was prepared by Synergy Environmental, LLC on behalf of Roosevelt Irrigation District ("RID") and submitted to the Arizona Department of Environmental Quality ("ADEQ" or "Agency") on October 22, 2012. Because the Modified ERA Work Plan represents an entirely different approach, it should properly be submitted as a new proposed ERA. RID's original 2010 proposed ERA was for a centralized treatment plant and an extensive piping system that would export water outside of RID's service area. The new proposed ERA is for operation of wellhead treatment systems, four of which RID has already installed under the guise of a pilot project. There are few similarities between the 2010 and 2012 proposals.

Because of the fundamental change to the nature of RID's proposed work, it would be inappropriate for the agency to pass judgment on its merits until the public has formally commented upon it, even if the agency allows submittal of this new proposal as a "modification". As was the case with its original ERA work plan, the Modified ERA Work Plan continues to suffer from severe technical deficiencies. As in 2010, it appears that RID's submittal reflects not a fully formed technical proposal intended to address current environmental risk, but rather a thinly disguised attempt to gain advantage in RID's litigation against the Stakeholders and others.¹ If the Agency does allow submittal of this proposal as a "modification" of the 2010 ERA, it must also enforce the requirements of the conditional approval of that ERA in order to ensure that the early actions do not exacerbate existing contamination.

¹ RID continues to pursue District Court litigation under the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA") against most of the signatories below, and others. *Roosevelt Irrigation District v. Salt River Project, et al*, No. 2-10-cv-00290 DAE-MHB (D. Ariz.).

It is evident from the Modified ERA Work Plan that RID has fundamentally changed its position regarding the purpose of its proposed ERA and the appropriate means of implementing it. For the past three years, RID had insisted that it was necessary for the agency to approve a regional groundwater remediation project utilizing a centralized treatment plant to address current risks to public health, welfare and the environment; protect RID's irrigation water supply; and control or contain the contamination to reduce the scope and cost of the final West Van Buren remedy. Stakeholders repeatedly pointed out in response that none of RID's claims was supported by data, as RID's canal water today remains fit for its end use (irrigation) without treatment.² RID now argues that the wellhead treatment described in the Modified ERA is necessary to protect and provide a supply of water for current and reasonably foreseeable future uses, and to address current and future risks from exposures due to volatilization of contaminants in groundwater. RID asserts that its Modified ERA constitutes a "more efficient and cost effective design and approach."³ But the modified approach is similarly unnecessary, and should not be approved. RID has again failed to demonstrate that the proposed work is necessary for any environmental reason, as opposed to RID's business and litigation goals. While Arizona Administrative Code (A.A.C.) R18-16-405.A allows ADEQ to approve an early response action prior to selection of a remedy, this is only the case where the early response action is proven to be necessary. As further explained below, the Modified ERA as described in the Work Plan is not necessary prior to selection of a remedy to meet either of the objectives stated by RID. RID continues to seek ADEQ's approval for the installation of unnecessary treatment systems in an effort to create a supply of remediated water that it can claim as its own, and to make the defendants in the litigation pay for upgrades to its antiquated irrigation system.

I. The Modified ERA Is Not Necessary To Protect Or Provide A Supply of Water To RID.

RID argues that the wellhead treatment described in the Modified ERA is necessary to protect and provide a supply of water for current and reasonably foreseeable future uses. Setting aside the question of whether the Modified ERA is the suitable vehicle to accomplish this task, it is clear that even treating the groundwater within the West Van Buren WQARF site to pristine quality would not make it a suitable water supply for the current and foreseeable future uses RID claims.

In the Modified ERA Work Plan, RID proposes to use wellhead treatment systems at the most highly impacted RID wells, purportedly to protect and provide a supply of water for all RID current and reasonably foreseeable future uses. But the pipelines, canals, laterals and other infrastructure in RID's existing distribution system are designed and operated to deliver groundwater mixed with wastewater treatment plant ("WWTP") effluent exclusively for

² Indeed, ADEQ's June 24, 2010 conditional approval of the original ERA concept was made subject to further documentation by RID of a number of factors relevant to the necessity and appropriateness of the proposed ERA, including a further demonstration of risk. RID has failed to make those demonstrations, and the Modified ERA Work Plan does not propose to remedy these deficiencies.

³ Letter of Transmittal, dated October 22, 2012, from Donovan L. Neese of RID to Henry Darwin, ADEQ.

irrigation use. Groundwater that is mixed with WWTP effluent cannot be used for potable drinking water. All of the impacted RID wells in the West Van Buren WQARF site either discharge into RID's Main Canal or into the Salt Canal, which in turn discharges into the Main Canal at 83rd Avenue. The Main Canal contains effluent from the City of Phoenix 23rd Avenue WWTP. Data presented in ADEQ's final Remedial Investigation Report (August 2012) for the West Van Buren WQARF site indicate that water quality in the RID canals meets applicable surface water quality standards without wellhead treatment and is suitable for its current end use.

RID proposes to install wellhead treatment units to treat water to potable standards at nine different wells, and then immediately discharge that water into irrigation canals where it will mix with WWTP effluent and be used for irrigation rather than drinking. Because groundwater that is mixed with WWTP effluent cannot be used for potable drinking water, the treatment proposed by RID serves no purpose and is completely unnecessary. RID states that its Modified ERA is designed to protect against an adverse impact to its water supply. But RID has no potable water supply to protect, and its irrigation water does not need any treatment based on years of analytical data.

Further, with regard to reasonably foreseeable groundwater uses, significant modifications to RID's existing distribution system would need to be designed and constructed before RID could provide potable water to potential customers within its service area. If RID started today, it would take several years to plan, design, obtain the funding, and construct the pipelines and other infrastructure needed to deliver potable water. Following the established remedy selection process in the WQARF rules, a final remedy will be selected long before RID has the infrastructure needed to deliver potable water for drinking water use.

In addition to the logistical hurdle posed by the configuration of RID's system, there are water rights hurdles to RID's provision of potable water to potential customers within its service area. New potable water uses of the kind RID envisions are subject to the Assured Water Supply program, as authorized by ARS § 45-576 *et seq.* Two significant Assured Water Supply requirements will prevent West Van Buren WQARF site groundwater from being used to meet new potable demands within RID's service area.

First is the requirement for water supplies to be consistent with Arizona's groundwater management goal (A.A.C. R12-15-722) ⁴. The management goal of the Phoenix Active Management Area ("AMA") is to reach a safe yield condition, where groundwater pumping is balanced by natural and artificial recharge. The Assured Water Supply program requires that water supplies are consistent with reaching this goal. In order for groundwater to serve as the basis of an Assured Water Supply, it must be replenished. The mechanism in place to accomplish this is the Central Arizona Groundwater Replenishment District ("CAGRDR"). In addition to the enrollment and activation fees, the current cost for groundwater replenishment is \$437 per acre-foot with advisory rates in 2017 of \$633 per acre-foot. These rates will continue

⁴ While there is an exemption to the consistency with the management goal requirement for poor quality groundwater, this exemption is only in place through 2025 and requires that an application was filed with ADWR before January 1, 2010. To our knowledge, no such application was filed by RID.

to increase as renewable water supplies become scarcer and need to be taken into account when determining whether this groundwater will be suitable for future potable uses.

The second Assured Water Supply requirement at issue is the requirement that the proposed water supply be legally available for at least 100 years (A.A.C. R12-15-718). RID's authority to pump groundwater from the West Van Buren WQARF site comes from an agreement with Salt River Valley Water Users Association that expires no later than 2026. The Assured Water Supply program would require that this agreement be extended for at least 100 years from the date the Assured Water Supply determination was made. The Association has no intention of extending this agreement.

Groundwater from the West Van Buren WQARF site does not meet the Assured Water Supply requirement for consistency with the management goal without costly replenishment. More importantly, groundwater from the West Van Buren WQARF site does not meet the legal availability requirement of the Assured Water Supply program and there is no path for compliance. Combined, these characteristics make this water supply unsuitable to meet the foreseeable uses RID envisions, and they call into question the logic of treating this water to potable standards.

The Arizona Department of Water Resources ("ADWR") has expressed concerns to RID regarding the continued pumping of groundwater within the WVB Site that is included within the City of Phoenix Designation of Assured Water Supply.⁵ There are no municipal water providers within RID's service area that have requested physical groundwater from RID as part of an Assured Water Supply Designation. ADEQ should not approve an ERA that could potentially negatively impact an existing Designated Provider or that is inconsistent with the management goals of the AMA.

Based on the remedial objectives defined in ADEQ's August 2012 Remedial Objectives Report for the West Van Buren WQARF site, the final remedy must include provisions to protect, restore, replace or otherwise provide a water supply to RID for drinking water use when it is needed in the future. If RID overcomes the water rights obstacles to its provision of potable water supplies, wellhead treatment or some other appropriate remedial technology could be put in place long before RID's distribution system was appropriately reconstructed to deliver potable water. In the meantime, it is absurd to contemplate spending tens of millions of dollars to treat irrigation water to drinking water standards, right before mixing that treated water with sewage effluent.

As you know, a regional group of stakeholders ("WVB FS Group") is currently conducting a feasibility study ("FS") in full compliance with the WQARF rules and U.S. Environmental Protection Agency's National Contingency Plan. This work is well underway and should be completed within the next six months. The FS will include a human health risk assessment, updated surface and groundwater quality evaluations, groundwater modeling, and a comprehensive remedial alternatives evaluation. The remedial alternatives evaluation will assess

⁵ See Letter dated November 11, 2011 to Stanley Ashby from Sandra Fabritz-Whitney

the effectiveness of wellhead treatment at RID's irrigation wells, along with many other remedial technologies, to identify the most efficient and cost-effective alternative to meet the remedial objectives. ADEQ can use the results of the FS to select and implement an appropriate final remedy for the site that fully complies with the WQARF requirements, achieves appropriate remedial objectives including RID's water supply needs, and protects public health, welfare and the environment. Because RID's current water supply needs are being met, wellhead treatment as described in RID's Modified ERA Work Plan is not necessary at this time.⁶

II. RID Has Failed To Identify Current Risks To Public Health, Welfare, And The Environment Sufficient To Compel Implementation Of The Modified ERA.

The second objective stated by RID in an attempt to justify approval of its Modified ERA is to "address current and future risks to public health, welfare, and the environment from exposures to contaminants in the groundwater that are known to volatilize into the air when pumped from the most highly contaminated RID wells." RID states that the current risk to be addressed by the Modified ERA is emission of volatile organic compounds into the air when RID wells are pumped.

RID has not presented any technical data in the Work Plan to document that a current risk to public health exists. In fact, RID's September 16, 2011 Public Health Exposure Assessment and Mitigation Summary Report prepared by Synergy Environmental, LLC ("RID Public Health Exposure Assessment") supports the conclusion that there is no current unacceptable public exposure. Specifically addressing risk related to contaminant volatilization, RID's Public Health Exposure Assessment concludes that there is not an imminent or acute threat to the public from contamination being released from the RID water system due to volatilization. RID's Public Health Exposure Assessment (page 22, paragraph 5) states:

"The overall findings of the investigation lead to the conclusion that emissions of COCs currently associated with pumping and conveyance of contaminated groundwater do not pose an imminent air inhalation threat to public health. The potential for acute exposure from the notably elevated point source emissions that were measured is not considered significant based on the fact that measured COC concentrations in the adjacent breathing zone are substantially lower. Moreover, discharge points at well sites are fenced to control public access and there are a limited number of open segments within the water conveyance to the RID Main Canal."

Although RID's Public Health Exposure Assessment does not follow standard risk assessment protocol and it is not complete or sufficiently detailed (the WVB FS Group previously provided comments to ADEQ noting these concerns), it is based on very conservative data collected from the two most contaminated wells and concluded that contaminant volatilization is not an imminent or acute threat to the public.

⁶ RID has also submitted an FS work plan, meaning two groups are now conducting FS work that will evaluate all of these factors, and calling into further question the need for implementation of the Modified ERA in the interim.

The absence of any current risk supporting the necessity of the Modified ERA is further confirmed by two other assessments of the potential risk associated with RID's system, one by Salt River Project Agricultural Improvement and Power District ("SRP") and the other by the City of Phoenix ("the City"). A human health risk assessment ("HHRA") was performed by AMEC for SRP to evaluate risks posed by RID canals. As described in AMEC's August 16, 2010 report "Evaluation of Human Health Risks Associated with Volatile Organic Compounds in the Roosevelt Irrigation District Canal System" (which was previously submitted to ADEQ by SRP), the results of this HHRA further support the conclusion that there is no imminent threat to public health posed by the RID well and canal system. Using June 2010 data reported by ADEQ, the HHRA evaluated the reasonable worst-case risk associated with VOCs in the RID system. In the cover letter to the August 16, 2010 report (cover letter, summary, page six, paragraph 2), AMEC summarized the potential risk as follows:

"The theoretical health risks associated with VOCs in the RID system are substantially less than levels considered to be unacceptable based on human health risk. In other words, our analysis indicated that there is no public health impact associated with operation of the RID system with a substantial margin of safety."

SRP submitted AMEC's report and cover letter to ADEQ on August 18, 2010.

The City of Phoenix has also evaluated whether existing data support the contention that there is a current unacceptable risk to public health that must be addressed. In an attachment to its April 21, 2010 letter to ADEQ commenting on RID's February 3, 2010 ERA Work Plan, the City compared groundwater and canal sampling data to established numeric surface water standards. The available water quality data were compared to 1) ADEQ 2009 Final Surface Water, Partial Body Contact Standards; 2) the 1998 Arizona Department of Health Service ("ADHS") Draft End Use Standards for open water conveyance; and 3) Final Health Based Guidance Levels established by ADHS for other sites in Arizona (ADHS, October 10, 2000). The comparative analysis conducted by the City showed that "the detected RID canal concentrations are less than the Final Standards and a complete current exposure pathway is not present."

SRP's HHRA and the assessments performed by RID and the City clearly support the conclusion that there is no current unacceptable public exposure from RID's operations in the WVB site that requires action or justifies an ERA prior to implementation of the final remedy. Even if there were a risk from exposure to volatilization of VOCs from water in the RID wells and canals, any such risk could be easily mitigated by more cost-effective approaches. RID itself explains in the Modified ERA Work Plan that improvements could be made to selected RID wells and open sections of RID canals to mitigate public access and exposure to volatilization of VOCs. These modifications include converting some open sections of RID's canals or laterals to below-grade pipeline, and enclosing the discharge boxes at the most contaminated well sites and adding passive activated carbon filters to capture any VOCs that might volatilize during pumping (see Work Plan Section 4.2.3 Well Modifications). These modifications would address volatilization of VOCs from RID's operations. Under any scenario, the expensive wellhead

treatment as proposed in the Modified ERA Work Plan is not necessary to address a volatilization risk. Since a risk to public health has not been documented, any approach to mitigate volatilization of VOCs at RID wells and canals should be evaluated as part of an FS and incorporated into the final remedy for the Site, rather than addressed in an ERA work plan.

III. RID Has Failed To Demonstrate That Implementation Of The Modified ERA Will Reduce The Scope And Cost Of The Final Remedy.

RID's statements that the Modified ERA Work Plan will reduce the scope and cost of the final remedy are also flawed. RID has ignored written conditions required by ADEQ and failed to complete the groundwater modeling, well investigations, and other technical analyses needed to demonstrate that wellhead treatment at its irrigation wells would be more effective and economical than other remedial alternatives. In fact, unnecessary treatment of water that is suitable for its current non-potable end use will likely increase the scope and cost of the final remedy.

The wells RID proposes to treat are screened across multiple aquifer units. Using these wells to remediate the aquifer would allow mixing of uncontaminated groundwater with contaminated groundwater, thereby significantly increasing the amount of groundwater that needs to be treated. For example, data from Montgomery & Associates' (July 25, 2011) Investigation Report of Well RID-95 indicate that more than 35% (600 gpm) of the groundwater entering the well during pumping came from the Lower Alluvial Unit (LAU). Depth-specific sampling performed by Montgomery and Associates showed that the groundwater in the LAU at RID-95 met drinking water standards. If the WVB remedy incorporates a plume containment, control, or plume remediation strategy, an effective approach would be to extract and treat groundwater from the most contaminated parts of the aquifer. This targeted approach would significantly reduce the amount of groundwater that required treatment and would increase the amount of contaminant mass removed. Groundwater pump and treat targeted at the most contaminated parts of an aquifer is a proven method of achieving plume containment, control, and/or remediation.

Two of ADEQ's conditions to approval of the original ERA required RID to conduct a comprehensive investigation of the RID wells (Task 2) and groundwater modeling (Task 3). These tasks were required by ADEQ to ensure that changes in pumping would not adversely affect groundwater quality and levels within the Site, and to determine how the RID ERA would affect the aquifer and wells in the area.

Task 2 stated, "RID must conduct well testing and modeling to insure that changes in pumping will not adversely affect groundwater quality and levels beyond that would be expected with the current pumping conditions". RID has not conducted well investigations and modeling to determine if the increased pumping at certain RID wells will adversely affect groundwater quality and levels. In addition to evaluating the effects on the VOC plume, evaluation of the dissolved chromium plume in the UAU is critical to ensure that the chromium plume is not adversely affected by the proposed change in pumping. A chromium source area has been identified at the ChemResearch site. The persistent concentrations of chromium found in the

groundwater at and downgradient of the ChemResearch facility indicate that the source of the chromium to groundwater continues and has not been adequately remediated. Different remedial technologies are utilized to treat chromium versus VOCs. If the proposed pumping exacerbates or accelerates the movement of chromium into and through groundwater from its source area at the ChemResearch facility, the Modified ERA Work will **increase** the scope and cost of the final remedy. Adequate source control at the ChemResearch site to prevent the ongoing release of chromium to the groundwater is of primary importance to the success of any remedy.

Further, despite RID's claim that the Modified ERA will not result in a net change in annual groundwater pumping volumes, pumping continuously from one set of wells while reducing pumping in other areas as proposed in the Work Plan could adversely affect local water levels or the migration of the groundwater plume. Water levels and groundwater plumes are not controlled by total annual volume extracted; they are controlled by where the groundwater is extracted and the specific pumping rates used at those locations. RID has already stated that under its Modified ERA its wells would operate year-round. This would represent a definitive change from the normal pumping scenario (e.g., seasonal pumping) that RID has been using for many years. Any variation from normal conditions will result in changes to the contaminant distribution, regardless of the magnitude of that variation. As clearly stated in ADEQ's approval of the original ERA, RID must conduct the required well investigations and groundwater modeling to determine if those changes will have adverse consequences.

IV. The ERA Proposed By RID Will Not Maximize Beneficial Use of Groundwater or Accelerate Future Changes of Use.

RID's statement that the Modified ERA will maximize the beneficial use of the groundwater is also unsupported. The beneficial uses will be exactly the same with or without the Modified ERA. Because RID's distribution system mixes groundwater with WWTP effluent, the groundwater can only be used and will continue to be used for irrigation unless and until RID modifies its existing system, assuming that is even legally authorized. There are also significant legal barriers to any change by RID to potable use.

As required by the remedial objectives ("ROs") for the WVB WQARF site, the final remedy will ensure that potable water is available to RID and other drinking water providers if the use changes in the future. Premature treatment of the groundwater to drinking water standards under an ERA will have no impact on the current or near-term uses of the groundwater.

V. The ERA Is Not "Deemed Necessary" By R18-16-405.I

RID argues that its Modified ERA is deemed necessary by R18-16-405.I, as follows:

"RID's contaminated and threatened wells in the WVBA Site meet the "necessary" condition in A.A.C. R18-16-405.I, which authorizes the RID ERA under A.A.C. R18-16-405.A and Arizona Revised Statutes (ARS) § 49-282.06.A."

As support for its proposition, RID cites A.A.C. R18-16-405.I, a rule that creates a presumption that applies only to “threatened wells.” The rule defines threatened wells as wells that are down-gradient or cross-gradient from the leading edge of a plume, and whose current use is threatened by advancement of the plume. The presumption allows early action where a plume is headed toward a threatened well and impairment to current use is imminent. This furthers the goal of an ERA – to allow early action where that action cannot wait for the final remedy.

RID cannot apply this presumption to wells that have been in the middle of a plume of contamination for several decades and are in no immediate danger of impairment as defined by WQARF. A well is “impaired” under WQARF if contaminant levels render the wells unfit for use without treatment. The RID wells within the plume boundary are currently fit for their irrigation use without treatment, and have stable or decreasing levels of contamination. Contaminant levels upgradient of these RID wells in eastern WVB and in Operable Unit 3 (“OU3”) of the Motorola 52nd Street Superfund Site are also stable or decreasing. RID’s wells are not newly threatened under any definition of the word, and there is no plume headed toward these wells that requires early action. Remedial action can await the WQARF final remedy, which will address each of these wells as needed and provide for future potable uses.

Even as applied to RID wells outside the plume boundary, the rule provides only a rebuttable presumption that action is necessary where the well is a certain distance from the plume. The presumption is intended to allow early action where the well owner cannot wait for the final remedy because the well will be overtaken and impaired before that time. The presumption can be rebutted by site-specific evidence. In the WVB site, the plume is not moving toward the RID wells outside the plume boundary, and contaminant levels in the plume are either steady or decreasing and do not exceed levels appropriate for irrigation use. Again, contaminant levels upgradient of RID wells in eastern WVB and in OU3 are stable or decreasing. Once again, there is no need for early action. The final WQARF remedy will address each threatened or impaired well as necessary to provide for current and reasonably foreseeable uses.

VI. RID Incorrectly Cites Remedial Action Criteria That Are Not Applicable To ERAs.

RID incorrectly states the criteria applicable to ERAs. On page 7 of the RID Modified ERA Work Plan, RID states:

“The RID ERA is consistent with the following remedial action criteria set forth in ARS §§ 49-282-06(A) and (B)(4)(b):

1. Assure the protection of public health and welfare and the environment;
2. To the extent practicable, provide for the control, management or cleanup of the hazardous substances in order to allow the maximum beneficial use of the waters of the state;
3. Be reasonable, necessary, cost-effective and technically feasible; and,

4. For remediation of waters of the state, the selected remedial action shall address, at a minimum, any well that at the time of selection of the remedial action either supplies water for municipal, domestic, industrial, irrigation or agricultural uses or is part of a public water system if the well would now or in the reasonably foreseeable future produce water that would not be fit for its current or reasonably foreseeable end uses without treatment due to the release of hazardous substances. The specific measures to address any such well shall not reduce the supply of water available to the owner of the well.”

Only the first three criteria cited by RID apply to ERAs.

The criteria for ERAs are found in A.A.C. R18-16-405.H. The rule provides:

- A. Any person may submit a request to the Department under R18-16-413 to approve an early response action or a work plan for an early response action. The request shall include the work plan and the written rationale for the early response action. The Department shall approve the work plan or early response action if it complies with the following:
 1. The requirements of this Section and A.R.S. § 49-282.06(A);
 2. Community involvement activities under R18-16-404;
 3. The work plan provides for modifications to address unknown or changed conditions; and
 4. Any applicable requirements of R18-16-411 and R18-16-412.

Thus, only subsection (A) of 282.06 is applicable to ERAs. The other requirements of Section 282.06 apply to final remedies. The provision cited by RID - Section 282.06 (B)(4)(b) - requires that final remedies address all impaired wells. Any FS conducted for the WVB site must assure that every well is evaluated, not just wells owned by RID, and that the final remedy selected includes measures to address impaired wells.

A well owner is certainly entitled to address a well through an Interim Remedial Action or an ERA, but only if the ERA is necessary to take action that is time-critical and cannot wait for conclusion of the process.⁷

⁷ The public policy reasons for this rule are obvious. It would undermine the entire WQARF process to require an ERA to address every impaired well in a WQARF site. Most ERAs are conducted before the remedial investigation (“RI”) is completed, and all are conducted before the FS is completed. The RI process is designed to gather all necessary data regarding wells in a site, including data regarding levels of contamination and current and future uses of the wells. The FS process then considers a wealth of information regarding the area hydrogeology and plume movement, incorporates extensive community involvement, and evaluates a variety of alternatives to ensure that the remedy selected meets all the rule criteria. Both these steps are essential to the evaluation and selection of the best remedial strategies and measures, and should be circumvented only where early action is necessary.

After incorrectly stating that its ERA must comply with ARS §49-282-06(B)(4)(b), RID argues that there are two broad requirements applicable to its ERA. RID states on page 4 that:

“Under state laws, no remedial or response action can reduce the quantity of RID's water supply or restrict the quality of RID's water supply from its maximum beneficial and/or for all RID current and reasonably foreseeable end uses (sic).”

RID's reference to a supposed mandate for all ERAs to provide the same quantity of water is a misstatement of (B)(4)(b). The actual requirement of (B)(4)(b) is that the well measures included in the final WQARF remedy may not reduce the supply of water available to the owner of a well. Again, (B)(4)(b) is not applicable to ERAs.

RID's reliance on a supposed quality mandate for ERAs is also misplaced. It appears to be a misstatement of the requirements of ARS §49-282-06(A)(2). That provision requires that every remedial action, including ERAs, must:

“To the extent practicable, provide for the control, management or cleanup of the hazardous substances in order to allow the maximum beneficial use of the waters of the state.”

That language does not provide a guarantee to well owners that an ERA must provide them a certain quantity of water. Protections for well owners are found only in the provisions governing final remedies for a reason. It is only there that the rights of all well owners and water providers across an entire WQARF site can be considered in the context of detailed site information, and information about all current and reasonably-foreseeable uses over a 100-year period. When conducting an FS and selecting a final remedy, specific well measures are considered along with remedial strategies and contingent measures and strategies. Site-wide impacts can be efficiently addressed through site-wide approaches, in addition to well-head measures.

VII. The Modified ERA Is Not Cost Effective.

RID claims that the ERA is cost effective because it predominantly uses existing RID wells, conveyances, and easements. However, the ERA is not necessary or cost effective because the groundwater pumped by RID is suitable for its current non-potable end use and does not require treatment. Even if treatment of groundwater were necessary prior to implementation of the final remedy, RID has not demonstrated that wellhead treatment at its production wells is the most cost effective approach. The Work Plan only provides a cursory evaluation of potential remedial alternatives which could provide a potable water supply to RID that it does not currently need.

The FS being conducted by the WVB FS Group in accordance with the WQARF rules will evaluate the cost effectiveness of various remedial alternatives, including wellhead treatment at RID's irrigation wells. Targeted groundwater pumping and treatment using new wells screened in the most contaminated parts of the plume may be the most efficient and cost

effective approach to remediate the Site. The FS will also evaluate and recommend remedial approaches to provide RID with a potable water supply should it be needed in the future.⁸

VIII. The Modified ERA Has Not Been Subject To Appropriate Community Involvement.

RID states that it is not submitting the Modified ERA Work Plan for approval under A.A.C. R18-16-413, but is only requesting ADEQ's "agreement to proceed" with the Modified ERA. RID's request is a deliberate attempt to circumvent the community involvement requirements of A.A.C. R18-16-404 and the WVB Community Involvement Plan ("CIP"). ADEQ should not sanction this attempt.

A.A.C. R18-16-404(C)(1)(h) is clear that a CIP must provide for "notice to the public and notification to interested persons of a request for approval of work under A.A.C. R18-16-413." Contrary to RID's assertion, the Modified ERA represents a significant and fundamental change in the ERA conditionally approved by ADEQ on June 24, 2010. That conditional approval was issued following a March 23, 2010 public meeting and subsequent written comment period which was the only noticed opportunity for the public to provide comments on RID's ERA proposal. Not a single member of the public not associated with RID expressed support for the ERA. ADEQ's June 24, 2010 conditional approval of the ERA was issued without providing any response to the substantial public comments and concerns raised with regard to the ERA.

Now, the supposed technical justification for much of the Modified ERA work relies on the results of work that RID contends it conducted to satisfy the conditions established by ADEQ in the June 24, 2010 conditional approval. But the public record is devoid of any public notice or opportunity for community input and involvement in reviewing and commenting on that work. RID also relies heavily on the pilot project work it conducted on Well RID-95. That work also was performed without any community participation and without ADEQ providing the required review and approval of the treatment design.⁹ Further, because of its status as a public entity, RID avoided City of Phoenix permitting requirements in siting and constructing the treatment equipment installed and placed into operation on four RID wells (RID-89, RID-92, RID-95 and RID-114). Finally, RID failed to comply with A.A.C. R18-16-404(C)(1)(m) and the CIP, which require notice to the public of field work that is conducted to remove contaminants of concern.

ADEQ did not seek or provide for any public comment or community input with regard to any of those activities. As is apparent from these comments to the Modified ERA Work Plan, RID's work is replete with substantial technical deficiencies and is not consistent with sound scientific principles. Yet, RID now purports to rely on the results of that work, much of which has yet to be made public, as justification for the Modified ERA. Under these circumstances,

⁸ The same would be true of RID's proposed FS, if it is properly conducted.

⁹ In ADEQ's September 2, 2010 letter to RID regarding its review of the RID-95 Wellhead Pilot Treatment System Proposal Work Plan, RID was specifically instructed to provide a detailed design of the Pilot Treatment System so that ADEQ could evaluate and confirm safeguards for protection. RID apparently ignored and did not comply with that requirement and proceeded to construct the Pilot Treatment System without obtaining ADEQ's approval as required by A.A.C. R18-16-411(C).

RID's request for ADEQ's "agreement to proceed" must be considered to be a "request for approval of work under A.A.C. R18-16-413." Accordingly, ADEQ must provide notice to the public and notification to interested persons of that request and, pursuant to A.A.C. R18-16-413(D), an opportunity to comment on the request for approval. ADEQ's failure to do so would be inconsistent with the stated objectives of the CIP to: (1) keep area residents, businesses and other interested parties informed about the progress of project activities by providing timely, accurate information; and (2) ensure open, two-way communication between stakeholders and ADEQ's technical and community involvement staff by providing opportunities for the public to provide input on issues and concerns related to the site.

Finally, any ADEQ approval of the Modified ERA Work Plan shall be made only after consideration of public comments and upon a determination that Modified ERA is in substantial compliance with the remedy selection rules in A.A.C. R18-16 - Article 4. Further, any such approval must be in writing and state the basis for the approval.

IX. RID Must Complete The Tasks Required By ADEQ In The Agency's Conditional Approval of the Original ERA.

ADEQ's conditional approval of RID's original ERA Work Plan required RID to complete four significant tasks in order to maintain the conditional approval. In addition, ADEQ required RID to take actions required in the WQARF rules, including community involvement, submittal of design and engineering plans for the ERA, and addressing unknown or changed conditions during the implementation of the ERA. As we have previously stated, we believe that the Modified ERA Work Plan represents an entirely new approach, and should properly be submitted as a new proposed ERA. Before approving a new proposal, ADEQ should require technical work similar to that required as conditions of approval of the 2010 ERA, to assure that the early work does not exacerbate existing contamination and to provide for full community involvement.

If the Agency does choose to allow submittal of RID's new proposal as a modification of the 2010 ERA, then all of the requirements of the conditional approval still apply. Although RID has done some work on Tasks 1 through 3, information in the public record indicates that RID has satisfactorily completed none of these tasks. In fact, RID's work has not come close to meeting the stated objectives of each task. RID appears to be trying to circumvent the requirements by conducting "pilot tests" separate from the ERA, then proposing a Modified ERA Work Plan based on the results of the pilot tests. The tasks listed in the conditional approval letter must be completed to demonstrate the need for an ERA, prove that RID's proposed approach meets the goals stated in A.A.C. R18-16-405.A, and ensure that early work will not exacerbate existing contamination.

X. ADEQ Should Not Facilitate RID's Attempt To Use The WQARF Program To Fund The Reconfiguration Of RID's Distribution System.

Clearly, RID may not ask the WQARF program to reconfigure the RID distribution system to segregate its effluent supply. That work would not be necessary to remediate or

respond to WQARF groundwater contamination. It would be necessary only to facilitate RID's entry into the potable water business. WQARF does not provide parties with a basis to recover costs for improving existing facilities and infrastructure.

Work that is motivated solely by business or profit motives is not "necessary" under WQARF. Remedial actions under WQARF, including ERAs, are not intended to authorize recovery of costs that a well owner or water provider would have incurred regardless of the release. As explained in the agency's rulemaking package, WQARF remedy selection addresses only the impacts of a release or a threatened release of a hazardous substance and will not cover remedial action costs that would have been incurred if the release had not impacted the property or well. For example, a well owner cannot require WQARF to replace a well with a more productive well.

This is not the first time a party has attempted to use a remediation statute in this fashion. In one case¹⁰, a building owner tried to recover costs of asbestos removal as part of a larger CERCLA remedy. The trial court held that the asbestos removal was not a "necessary" response within the meaning of CERCLA, because the plaintiffs failed to demonstrate any risk to human health or the environment – the asbestos could have remained in the building with no harm to anyone. The Seventh Circuit agreed that parties could not use CERCLA as a mechanism to recover the cost of improvements to their land or facilities:

“The statutory limitation to "necessary" costs of cleaning up is important. Without it there would be no check on the temptation to improve one's property and charge the expense of improvement to someone else. Suppose a building that was being used to warehouse heavy industrial equipment were found to have very low levels of contamination by some hazardous substance and only a small expenditure would be necessary to remove enough of the substance to make the building safe for its current use. Thinking this a perfect opportunity to upgrade that use, the owners decide to incur enormous costs to eliminate the contamination utterly, charge those costs to whoever was responsible for the current very low level of contamination, and then convert the building to a hospital, day care center, or dairy products plant. The limitation to "necessary" response costs would deter them from carrying out this scheme.”

The court's example is exactly the situation we have here. Steps must be taken to address groundwater contamination in West Van Buren. But that contamination does not serve as an excuse for RID to charge third parties for the cost of upgrading its facilities to become a potable water provider.

¹⁰ *G.J. Leasing Co., Inc. v. Union Electric Co.*, 854 F. Supp. 539, 561-63 (S.D. Ill. 1994).

XI. Regional Remedial Actions At Phoenix Area Federal Superfund Sites Are Final CERCLA Remedies And Do Not Provide Meaningful Precedent For WQARF ERAs.

RID's claim that the remedial approach and degree of treatment described in the Modified ERA are "conceptually similar" to other remedial actions at Phoenix area Superfund sites is nothing more than an attempt to sidestep its responsibility to abide by the WQARF process in evaluating and selecting a remedy and cleanup goals. RID's reasoning is flawed.

As ADEQ is well aware, when WQARF was amended in 1997, it represented a specific rejection of the CERCLA approach to groundwater remediation. Indeed, ADEQ's response to comments on the new WQARF rules stated:

"WQARF reform represents a broad rejection of the CERCLA approach to remediation of contaminated sites in favor of an approach that is specifically tailored to work in Arizona."

CERCLA's National Contingency Plan ("NCP") generally calls for *final* remedies to achieve (actively or passively) aquifer restoration. WQARF does not adopt this goal for final remedies, much less early response actions. WQARF's focus is on providing water fit for use at the time of that use. WQARF does not, like CERCLA, necessarily require aquifer restoration. Under A.R.S. § 49-282.06(D) "the Director may approve a remedial action that may result in water quality exceeding water quality standards after the completion of the remedy if the Director finds that the remedial action meets the requirements of this section." Determining final cleanup levels only occurs after completion of the FS which would involve an extensive analysis of remedial alternatives and comprehensive community involvement. Indeed, the final remedies at those Phoenix-area CERCLA sites named by RID were selected only after an extensive study of remedial alternatives and comprehensive community involvement.¹¹

By contrast, RID's Modified ERA is not the result of an extensive study of remedial alternatives and goes well beyond any early or interim remedial action that would be undertaken under CERCLA. RID's analysis of remedial alternatives has been woefully inadequate and certainly is not consistent with WQARF requirements. Further, as explained in these comments, community involvement also has been completely inadequate. It is not a sufficient substitute for the WQARF process for RID to merely claim that the remedial approach and degree of treatment is "conceptually similar" to other CERCLA sites.

¹¹ Even CERCLA recognizes that aquifer restoration is not always appropriate and may be unachievable at sites with very complex groundwater contamination problems. At such sites, EPA typically will utilize a phased approach in conducting site remedial activities so as to develop a more accurate understanding of the restoration potential of the contaminated aquifer. Under that approach, early actions will focus only on reducing risk imposed by site contamination, typically involving containment or removal of contaminant sources. Interim remedial actions may abate the spread of contamination or limit exposure but do not fully address final cleanup levels for the site

XII. RID Has Not Demonstrated That The Modified ERA Is Consistent With The NCP, And ADEQ Should Not Issue The Improper And Unsupported Findings RID Requests For Litigation Advantage.

In the Modified ERA Work Plan, RID asserts without elaboration that the Modified ERA Work Plan (page 1) “is also consistent with the goals established for the federal Superfund program under the National Contingency Plan.” RID appears to acknowledge that ADEQ need not review the Modified ERA Work Plan for NCP consistency. Because RID is using the WQARF administrative process to support its CERCLA litigation, however, ADEQ should expressly decline to opine on NCP consistency in any approval of the Modified ERA Work Plan. The Agency declined to do so in its conditional approval letter for the original ERA, stating “ADEQ has not reviewed whether the ERA Work Plan is consistent with any federal laws or regulations.” Since RID has not even attempted to demonstrate that the Modified ERA is consistent with the NCP, the Agency should ensure that its response to the Modified ERA Work Plan does not provide RID with the undeserved litigation advantage that might arise were ADEQ to make unnecessary findings to which RID could ask the court to defer.

XIII. The Modified ERA Confirms That RID’s Pilot Wellhead Treatment Was Not Necessary.

The Stakeholders do not dispute that treatment of VOCs via liquid-phase granulated activated carbon (“GAC”) is considered a presumptive remedial technology and response strategy by the U.S. Environmental Protection Agency. The use of GAC to remove VOCs from groundwater is a proven treatment technology that has been shown to be effective at many other contaminated sites, including the nearby Operable Unit 1 (“OU1”) and Operable Unit 2 (“OU2”) portions of the Motorola 52nd Street Superfund Site. In fact, this is exactly the point that the Stakeholders made previously to ADEQ regarding RID’s unnecessary RID-95 Wellhead Pilot Treatment System Proposal.

At the time it proposed the pilot test, RID stated that the scope and objective for the RID-95 Pilot Treatment Study was to “evaluate the reliability and effectiveness of using two different types of liquid-phase granular activated carbon (GAC) to remove volatile organic compounds (VOCs) from groundwater.” Since the reliability of GAC was never in doubt, Stakeholders noted that RID must have been proposing the pilot test for some other reason. RID now acknowledges that treatment of VOCs using liquid-phase GAC is a proven, presumptive remedial technology. Clearly, the scope and objective for the RID-95 Pilot Study was flawed and the expense and operation of the Pilot Treatment System was not necessary.

Wellhead treatment of VOCs via GAC is a remedial measure that may be evaluated as part of an FS. But the fact that GAC treatment has been proven to be effective at other cleanup sites does not mean that it is necessary or cost effective at this site. Just because a remedy is a presumptive response strategy and has been proven to be technically feasible and cost-effective at certain sites does not mean it is necessary or cost-effective at a particular site. Evaluating that is the purpose of the FS.

XIV. The Modified ERA Is Not Necessary To Address Current Or Future Contaminant Migration From The Motorola 52nd Street Site Or From The West Osborn Complex WQARF Site.

RID misstates the potential for ongoing contaminant migration from the Motorola 52nd Street Site to the WVBA. The OU2 Regional Groundwater Extraction and Treatment system, located at approximately 20th Street and Washington (upgradient of OU3 and WVB), has been operating to hydraulically contain the Motorola 52nd Street Superfund Site groundwater plume since 2001. Multiple lines of evidence presented in the OU2 annual effectiveness reports, and agreed to by ADEQ and EPA, have demonstrated that the OU2 system currently is effective at capturing the entire width of the groundwater plume. Among these lines of evidence are the decreasing VOC concentrations in OU3, indicating that OU2 currently is not a continuing source to OU3 and, therefore, is not a current threat to WVBA. Accordingly, implementation of the Modified ERA is not necessary to address current or future migration of contaminants from the Motorola 52nd Street Site.

Regarding potential threats from the West Osborn Complex WQARF Site, the Modified ERA incorrectly identifies the five individual and distinct WQARF sites within the West Central Phoenix area as "operable units." Rather, the West Central Phoenix WQARF Site was established in 1987 and was split into five separate and distinct WQARF sites in 1998. This information is widely available and well known. RID incorrectly suggests that all five of these WQARF sites comprise a single "site" that collectively threatens the WVBA and, therefore, necessitates the Modified ERA. RID's position lacks any technical analysis or justification. To the extent that any contaminant migration is occurring from the West Osborn Complex WQARF Site into the WVBA, the appropriate remedy to address that contaminant migration will be determined in a WQARF compliant FS. Accordingly, implementation of the Modified ERA is not necessary to address current or future migration of contaminants from the West Osborn Complex WQARF Site.

XV. The UAU Is Not The Only Source Of Water For RID Wells.

The Modified ERA Work Plan states that "Based on the similarity in PCE and TCE concentrations in the RID and monitor wells, it appears that the RID wells derive most of their groundwater from the UAU." This statement is in direct conflict with the data obtained from RID's investigation of well RID-95. As reported by Montgomery & Associates (January 11, 2012), the results of that investigation indicated that 36% of the groundwater extracted by RID-95 (600 of 1650 gpm) is derived from the LAU. The as-built construction of each well and the specific hydrogeologic characteristics of the aquifer at each well location will determine the amount of groundwater that will be drawn into the well from each aquifer. The similarity in TCE and PCE concentrations cannot be used to conclude that the RID wells derive most of their water from the UAU.

Task 2 in ADEQ's conditional approval of the original ERA Work Plan required RID to conduct an investigation of its wells to determine their suitability for use in the ERA. To date, RID has fully investigated only one well (RID-95) and reported those results to ADEQ. The

Work Plan states that “well investigations were recently conducted at RID-111R and RID-92” but the scope and results of those investigations apparently have not been reported to ADEQ. This falls far short of the requirement that RID conduct detailed investigations on all RID ERA wells, in order to understand fluid movement and the effect the ERA will have on “wells in the plume area” prior to implementing an ERA.

XVI. RID Has Failed To Adequately Address Potential Vertical Cross-Contamination Caused By Its Wells.

The Work Plan contends that “results of well investigations at RID-95 demonstrated that there is an upward gradient under non-pumping conditions, preventing the downward movement of contaminants and any vertical cross-contamination of alluvial units.” It is not possible to conclude based on investigation of one well that an upward gradient exists under non-pumping conditions throughout the aquifer. In addition, the construction and current condition of each well, coupled with the hydrogeologic characteristics of the alluvial units at each well location, will determine whether a specific well has the potential to cause vertical cross-contamination.

In ADEQ’s Final RI Report (August 2012), Terranext reported that downward vertical flow was consistently observed in paired wells at six locations in the WVB Site. In addition, both upward and downward vertical flow was observed in paired wells at eight other locations. These data clearly indicate that both upward and downward gradients exist at different locations and depths in the alluvial units. As requested by ADEQ in its conditional approval, it is necessary for RID to investigate all of its wells in order to fully understand the hydraulic characteristics of the aquifers and the effect of continuous pumping of the RID wells on plume migration.

Investigation of the RID wells is also necessary to evaluate whether the wells are potential conduits for vertical cross-contamination of the aquifers. Depth-specific groundwater sampling conducted during pumping of RID-95 detected TCE at low concentrations in the LAU at depths of 990, 1,090, and 1,370 feet. Benzene and toluene were also detected in the well at a depth of 1,370 feet in a sample collected under non-pumping conditions. Montgomery & Associates (January 11, 2012) stated that the source and mechanism for the presence of these VOCs in the LAU was not determined and is unknown. Clearly, additional investigation is needed to determine the source and mechanism for the presence of these VOCs in the LAU.

XVII. Conclusion.

Neither the Modified ERA nor the original ERA is necessary. There is no current risk that must be addressed through early action. And there is no immediate water supply need that requires early action. RID’s water supply is suitable for its current irrigation use. There are a number of obstacles to RID’s proposed change of that use. Among those obstacles are the configuration of the RID system, which mixes the RID supply with effluent, and various water rights obstacles. SRP has previously commented to ADEQ and ADWR regarding these obstacles, which include:

- Groundwater within the Salt River Reservoir District ("SRRD") is reserved for use within the SRRD boundaries, and RID's diversion or withdrawal is prohibited absent a continuing agreement with SRP.
- The existing agreement between SRP and RID providing for RID's diversion and withdrawal of groundwater from the western SRRD service area terminates no later than 2026.
- Any continued use of groundwater from within the SRRD by RID beyond 2026 will require a water exchange to keep SRP whole. No such water exchange exists.
- The intent of the agreement allowing RID to divert and use groundwater for irrigation use was to relieve water logging conditions that were present in the 1920's. The water table has dropped substantially, and absent incidental recharge due to the urbanization of lands within the SRRD, water logging will not return. SRP has no intent to extend the existing agreement with RID.
- The Modified ERA cannot be economically justified with the termination of pumping occurring no later than 2026.
- RID provides water for irrigation only and has no authority to provide drinking water.
- Groundwater within the WVB WQARF area is included within the City of Phoenix Designation of Assured Water Supply.

Because the ERA is not necessary, the WQARF remedy selection process should be allowed to proceed. That process is designed to ensure careful evaluation of all information and full community involvement. The final remedy that is selected will then ensure that potable supplies are available if RID overcomes these obstacles to its delivery of potable water.

Because the ERA is not necessary, the many deficiencies that render the ERA neither reasonable nor technically feasible become secondary considerations. Stakeholders have identified many of the deficiencies in RID's 2010 ERA proposal that would continue to be concerns if the Modified ERA proposal were allowed to proceed. We have also identified concerns that are triggered by the new MERA proposal. But we stress that an ERA may not be utilized to bypass the WQARF remedy selection process unless the work is necessary. Addressing the many technical flaws in this proposal would not cure that underlying fatal flaw.

We appreciate your consideration of our comments on RID's Modified ERA Work Plan. We are available to meet with you to discuss the topics presented in this letter at your convenience. We look forward to hearing from you soon.

Sincerely,



Philip McNeely, R. G., Manager
Office of Environmental Programs

December 3, 2012

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Submitted on behalf of the following:

Air Liquide America Specialty Gases, LP

Arizona Public Service Company

City of Phoenix

Dolphin, Inc.

Holsum Bakery, Inc.

Honeywell International Inc.

Laundry and Cleaners Supply, Inc.

Maricopa Land and Cattle Co.

Milum Textile Services Co.

Penn Racquet Sports

Prudential Overall Supply

Salt River Project Agricultural Improvement & Power District

Schuff Steel Co.

Univar USA Inc.

c: Laura Malone (via electronic mail)

Tina LePage (via electronic mail)